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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,129	07/24/2001	Mary Louise Mandich	Mandich 9-10	4928

7590

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Docket Administrator
Lucent Technologies, Inc.
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EXAMINER

HOFFMANN, JOHN M

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 07/03/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/912,129

Applicant(s)

MANDICH ET AL.

Examiner

John Hoffmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2002.
- 2a) ☐ This action is FINAL.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-26 and 28-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10, 12-26 and 28-33 is/are allowed.
- 6) ☒ Claim(s) 34-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3 June 2002 has been entered.

Allowable Subject Matter

Claims 1-10 , 12-26 and 28-30 are allowed.

Claim Rejections - 35 USC § 112

Claims 42 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 42 refers to "a portion of chromia particles in the tube". It is unclear if this requires that there be chromia particles in the tube

Claim Rejections - 35 USC § 103

Claims 34-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhandarkar 5356447 in view of Shintani 4264347.

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Bhandarkar teaches the invention as claimed except for the use of specific gas, col. 3, line 55 to col. 4, line 26. Instead, Bhandarkar discloses that some routine experimentation was performed to determine the most optimal gas (col. 4, line 8). It would have been obvious to perform additional routine experimentation to determine what the best gas is. At col. 7, lines 16-43, col. 2, lines 28 Shintani teaches which gases can be used to remove impurities from silica fiber preforms. And/or would have been obvious to use any of the Shintani gases for the Bhandarkar gases because it is the mere substitution of one known cleaning gas for another. Further it is noted that the claim gas is a homomorph of the Bhandarkar preferred gas - it just has one substituted Group VIB atom (sulfur) for another Group VIB atom (oxygen). Further, col. 4, lines 19-26 spell out what one needs for a reactant. It is inherent that the glass is treated by the gas at all temperatures from about room temperature to the final temperature - including all temperatures within the 400-800C range.

In addition, it would have been obvious to determine the optimal temperature for using sulfur chloride by routine experimentation.

As to claims 42-43, see Bhandarkar, col. 2, lines 45-53 and col. 3, lines 55-67 which indicate that the molecular chlorine will reduce the particles.

Please refer to rejections of Application 09/109827 for any specific details not discussed above.

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Claims 34-41 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhandarkar 5356447 in view of JP 1-164740 (hereinafter 'Kanamori') and Chandross 5240488.

Bhandarkar discloses the invention substantially as claimed, except for any non-oxygenated sulfur halide. Bhandarkar also teaches a step of dehydrating the porous body - prior to the treatment with an oxygenated sulfur halide (see col.2, lines 45-53). For this dehydrating step, Bhandarkar gives chlorine-oxygen as an example of a dehydroxylating treatment.

Kanamori discloses that it is preferred to use S_2CL_2 to dehydrate porous glass. See the English translation, page 7, line 16 and 27; page 6, lines 3-8; the sentence spanning pages 6-7; and the disclosed examples which shows S_2CL_2 as having the best results. It would have been obvious to alter the Bhandarkar method by using the S_2CL_2 mixed with inert gas as the dehydrating gas, for the advantages and reasons put forth by Kanamori. It is inherent that the S_2CL_2 would reduce the size of the particles.

As to the temperature limitations, See the Table at cols 11-12 of Chandross: feature 12 a) discloses the preferred temperature for dehydrating is 500-1000 which is a substantial overlap with Applicant's 400-800 temperature. One of ordinary skill realizes that higher temperatures are more expensive than lower temperatures - see feature 13a) of the table. It would have been obvious to do the dehydrating at the lower end of the preferred temperature range (i.e. near 500 C) to reduce the power costs for the process.

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Alternatively: col. 2, lines 45-46 of Bhandarkar disclose that the gas treatment occurs while the body is "ranging" from room temperature to whatever final temperature is used. Chandross at feature 11 a) of the TABLE of cols. 11-12 discloses that the removal of volatiles has 500 C as the upper temperature. Claim 1 of Kanamori discloses an upper temperature between 900 and 1100C. It would have been obvious to supply the S_2CL_2 during the entirety of heating from end of the removal of volatiles step to the upper temperature, because it would be a waste of time to wait until later to start the treatment gases. Thus, as the ramping (i.e. ranging) from no more than 500 C to no less than 900C, the preform would be treated as it ranges (i.e. ramps) from 400 to 800C.

Claim 35: As the obvious combination ramps (i.e. ranges) from the starting to final temperature, it would inherently also ramp/range from 600 to 700C.

Claim 36: See Table 1, item 12b) of Chandross - it would have been obvious to perform routine experimentation to determine the optimal amount of time needed to dehydrate the preform.

Claims 37-40 and 44 are clearly met.

Claim 41: The Kanamori uses only a 2% chloride. Chandross teaches at the Table, item 12 c) 1. that one can use 1-100% of the dehydrating agent. It would have been obvious to increase the amount of S_2CL_2 used - so as to increase the reaction rate, with no new or unexpected results.

Response to Arguments

Applicant's arguments filed 3 June 2002 have been fully considered but they are not persuasive.

As to the arguments relating to equivalency. The present rejection has no assertion or mention of any equivalency. Thus the arguments are not persuasive.

As to the arguments that the prior art does not supply the teaching to combine: such arguments were addressed in the previous Office Action.

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As to the obvious combination being against the teachings of Bhandarkar:

Examiner considered the totality of the references. Based on the hedge-words used in the Bhandarkar, it is deemed that one of ordinary skill would not interpret the Bhandarkar disclosure as strongly as Applicant does. Bhandarkar is clearly open to other gases. Most importantly at col. 4, lines 6-7 Bhandarkar states "Related halogen-containing compounds may serve to remove the refractory particles". Anyone reading that "Related halogen-containing compounds may serve to remove the refractory particles" would immediately realize that Bhandarkar is not completely sold that the best compound is the one that was found. Of course there are many other things that Bhandarkar says that demonstrates other compounds would work, but "Related halogen-containing compounds may serve to remove the refractory particles" is the best. Anyone using the Bhandarkar method would immediately pick up on "Related halogen-containing compounds may serve to remove the refractory particles" and instantly realize Bhandarkar teaches that related halogen-containing compounds may serve to remove the refractory particles and thus no one would even think for a moment that related halogen-containing compounds may not serve to remove the refractory particles.

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It is further argued that SO- effectiveness is a teaching away from compounds that have no SO- moiety. Bhandarkar discloses three other compounds that have no SO- moiety (col. 4, lines 10-11). This is two sentences after "Related halogen-containing compounds may serve to remove the refractory particles". After reading "Related halogen-containing compounds may serve to remove the refractory particles", one of ordinary skill would recognize that since Bhandarkar does not consider a SO- moiety to be a requirement for something to be a "related" compound - and thus the one of ordinary skill would also not feel any requirement to limit the search for related halogen-containing compounds that serve to remove the refractory particles - in the manner that Applicant suggests.

It is further argued that there is no motivation or expectation of success to combine the Bhandarkar method - with the Shintani's use of oxygen. The accuracy of this argument is irrelevant because the rejection does not propose such a modification. This is the same regarding the HF treatment that Applicant alleges is part of the rejection.

It is further argued that one treatment is a surface treatment and the other is a bulk treatment. This is merely a manner of semantics. A bulk treatment of a porous preform is also a surface treatment - because the surfaces treated occur throughout the bulk of the gas.

AS to the Declaration filed 03 June 2002 - the entirety was considered. It is noted paragraphs 5 and 7 refers to gaseous "byproducts" mentioned in claim 1 of Bhandarkar. Examiner could only find that a single "byproduct" is mentioned. It is noted the claim is comprising in nature and thus is open to having a non-gaseous byproduct. Paragraph 7 also refers to Shintani's "viscous surface layers" and "liquids" - likewise Examiner could only find the singular version in Shintani. Likewise, Shintani appears to be open to having a gaseous byproduct in addition to a nongaseous byproduct. But most importantly, the Declaration only addresses equivalency - something that the Office does not allege. Thus it does not appear to any of the rejections. In particular, the Declaration does not say anything about how related halogen-containing compounds may serve to remove the refractory particles.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is 703-308-0469. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stan Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7115 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

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John Hoffmann
Primary Examiner
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